

AMENDMENTS TO THE CLAIMS

What is claimed is:

1. (Currently Amended) A method of controlling the transmit power of a mobile ~~terminal~~ station in a mobile communication system, comprising:

varying a first transmit power level of the mobile station on a first reverse link channel responsive to power control commands from a serving base station, while conditionally ignoring power control commands from any non-serving base stations for purposes of power controlling the first reverse link channel; and varying a second transmit power level of the mobile station on a second reverse link channel responsive to power control commands from at least one non-serving base station.

2. (Original) The method of claim 1 wherein the first reverse link channel is a reverse rate control channel and the second reverse link channel is a reverse traffic channel.

3. (Original) The method of claim 2 wherein the gain of the reverse rate control channel is fixed relative to a reverse pilot channel and wherein the transmit power level of the mobile station on the reverse pilot channel is varied responsive to the power control commands from the serving base station.

4. (Original) The method of claim 2 wherein the gain of the reverse traffic channel is fixed relative to a reverse pilot channel and wherein the transmit power level of the mobile station on the reverse pilot channel is varied responsive to the power control commands from the at least one non-serving base station.

5. (Original) The method of claim 1 wherein varying a second transmit power level of the mobile station on a second reverse link channel responsive to power control commands from at least one non-serving base station comprises:

receiving power control commands from one or more non-serving base stations; and
decreasing the second transmit power level if at least one of the non-serving base stations commands the mobile station to decrease its power level.

6. (Original) The method of claim 5 wherein varying a second transmit power level of the mobile station on a second reverse link channel responsive to power control commands from at least one non-serving base station further comprises increasing the second transmit power level if all of the non-serving base stations command the mobile station to increase its power level.

7. (Original) The method of claim 5 further comprising varying a second transmit power level of the mobile station on a second reverse link channel responsive to power control commands from the serving base station.

8. (Currently Amended) The method of claim 7 wherein varying a second transmit power level of the mobile station on a second reverse link channel responsive to power control commands from the serving base station comprises decreasing the transmit power level of the mobile station if the serving base station ~~command~~ commands the mobile station to decrease its transmit power.

9. (Original) The method of claim 8 wherein varying a second transmit power level of the mobile station on a second reverse link channel responsive to power control commands from the serving base station further comprises increasing the transmit power of the mobile station on the second reverse link channel if the serving base station and each non-serving base station commands the mobile station to increase its transmit power.

10. (Original) The method of claim 1 further comprising computing a first channel gain of one of the first and second reverse link channels relative to a third reverse link channel.

11. (Currently Amended) The method of claim 10 wherein varying a first transmit power level of the mobile station on a first reverse link channel responsive to power control commands from a serving base station, while conditionally ignoring power control commands from any non-serving base stations for purposes of power controlling the first reverse link channel comprises:

~~determining ignoring the power control commands from any non-serving base stations if~~

the first channel gain meets a predetermined criterion; and

~~varying the transmit power level of the mobile station on~~ considering power control commands from one or more of the non-serving base stations for purposes of power controlling the first reverse link channel if the first channel gain ~~meets~~ does not meet the predetermined criterion.

12. (Original) The method of claim 11 further comprising varying the first transmit power level of the mobile station on the first reverse link channel responsive to power control commands from at least one non-serving base station if the first channel gain does not meet the predetermined criterion.

13. (Original) The method of claim 10 wherein varying a second transmit power level of the mobile station on a second reverse link channel responsive to power control commands from at least one non-serving base station comprises:

determining if the first channel gain meets a predetermined criterion; and

varying the transmit power level of the mobile station on the second reverse link channel if the first channel gain meets the predetermined criterion.

14. (Original) The method of claim 13 further comprising varying the second transmit power level of the mobile station on the second reverse link channel responsive to power control commands from the serving base station if the first channel gain does not meet the predetermined criterion.

15. (Original) The method of claim 10 further comprising computing a second channel gain of one of the first and second reverse link channels relative to the third reverse link channel.

16. (Currently Amended) The method of claim 40 15 wherein varying a first transmit power level of the mobile station on a first reverse link channel responsive to power control commands from a serving base station, while conditionally ignoring power control commands from any non-serving base stations for purposes of power controlling the first reverse link channel comprises:

~~determining if the second~~ ignoring the power control commands from any non-serving base stations if the first channel gain meets a first predetermined criterion;

~~determining ignoring the power control commands from any non-serving base stations if~~

the second channel gain meets a second predetermined criterion; and

~~varying the transmit power level of the mobile station on~~ considering power control

commands from one or more of the non-serving base stations for purposes of

power controlling the first reverse link channel if either of the first and second channel gains does not meet the first and second predetermined criterion

respectively.

17. (Original) The method of claim 16 further comprising varying the first transmit power level of the mobile station on the first reverse link channel responsive to power control commands from at least one non-serving base station if the first channel gain does not meet the first predetermined criterion.

18. (Original) The method of claim 1 further comprising varying a first transmit power level of the mobile station on the first reverse link channel responsive to power control commands from at least one non-serving base station if the mobile station is in a discontinuous transmission mode.

19. (Original) The method of claim 2 wherein the reverse link comprises a primary pilot channel and at least one secondary pilot channel, and wherein the gain of the reverse traffic channel is fixed relative to the primary pilot channel.

20. (Original) The method of claim 19 wherein the gain of the reverse rate control channel is fixed relative to the sum of the transmit power on all reverse link pilot channels.

21. (Original) The method of claim 20 wherein the mobile station varies its transmit power on the primary pilot channel responsive to power control commands from at least one non-serving base station.

22. (Original) The method of claim 21 wherein the mobile station varies its transmit power on at least one secondary pilot channel responsive to power control commands from the serving base station such that the total transmit power on all reverse link pilot channels remains within predetermined limits.

23. (Original) The method of claim 1 wherein the first reverse link channel is a reverse pilot channel and the second reverse link channel is a reverse traffic channel.

24. (Original) The method of claim 1 wherein the first reverse link channel is a reverse rate control channel and the second reverse link channel is a reverse pilot channel.

25. (Currently Amended) A method of controlling the transmit ~~power~~ powers of first and second reverse link channels of a mobile ~~terminal station~~ by a serving and one or more non-serving base station stations in a mobile communication system, comprising:

determining whether the a given base station is a serving base station for forward link communications with the mobile station;

power controlling ~~a first reverse link channel if the base station is the serving base station~~ only the second reverse link channel if the base station is not the serving base station; and

power controlling ~~a second reverse link channel if the base station is not the serving base station~~ at least the first reverse link channel if the base station is the serving base station.

26. (Original) The method of claim 25 wherein the first reverse link channel is a reverse rate control channel and the second reverse link channel is a reverse traffic channel.

27. (Original) The method of claim 26 wherein the gain of the reverse rate control channel is fixed relative to a reverse pilot channel.

28. (Original) The method of claim 27 further comprising power controlling the reverse pilot channel if the base station determines that it is the serving base station.

29. (Original) The method of claim 26 wherein the gain of the reverse traffic channel is fixed relative to a reverse pilot channel.

30. (Original) The method of claim 29 further comprising power controlling the reverse pilot channel if the base station determines that it is a non-serving base station.

31. (Original) The method of claim 25 further comprising power controlling the reverse pilot channel by a non-serving base station if the mobile station is in a discontinuous transmission mode and the received power on the reverse pilot channel is above a predetermined threshold at the non-serving base station.

32. (Currently Amended) A method of controlling the transmit power of a mobile ~~terminal~~ station in a wireless communication system during a soft handoff wherein the active set for the mobile station includes two or more base stations, the method comprising:

- selecting one of the base stations in the active set as the serving base station for forward link communications with the mobile ~~terminal~~ station;

- receiving power control commands from the serving base station and at least one non-serving base station in the active set;

- varying a first transmit power level of the mobile station on a reverse rate control channel responsive to power control commands from a serving base station, while conditionally ignoring power control commands from any non-serving base stations for purposes of power controlling the reverse rate control channel; and

- varying a second transmit power level of the mobile station on a reverse traffic channel responsive to power control commands from at least one non-serving base station.

33. (Original) The method of claim 32 wherein the gain of the reverse rate control channel is fixed relative to a reverse pilot channel and wherein the transmit power level of the mobile station on the reverse pilot channel is varied responsive to the power control commands from the serving base station.

34. (Original) The method of claim 32 wherein the gain of the reverse traffic control channel is fixed relative to a reverse pilot channel and wherein the transmit power level of the mobile station on the reverse pilot channel is varied responsive to the power control commands from the non-serving base station.

35. (Currently Amended) The method of claim 32 wherein varying the transmit power level of the mobile station on the reverse traffic channel responsive to power control commands from at least one non-serving base station comprises:

receiving power control commands from one or more non-serving base stations; and
decreasing the second transmit power level if at least one of the non-serving base stations commands the mobile station to decrease its power level.

36. (Original) The method of claim 35 wherein varying the transmit power level of the mobile station on the reverse traffic channel responsive to power control commands from at least one non-serving base station further comprises increasing the second transmit power level if all of the non-serving base stations command the mobile station to increase its power level.

37. (Original) The method of claim 36 further comprising varying the transmit power level of the mobile station on the reverse traffic channel responsive to power control commands from the serving base station.

38. (Original) The method of claim 37 wherein varying the transmit power level of the mobile station on a reverse traffic channel responsive to power control commands from the serving base station comprises decreasing the transmit power level of the mobile station on the reverse traffic channel if the serving base station commands the mobile station to decrease its transmit power.

39. (Original) The method of claim 38 wherein varying the transmit power level of the mobile station on a reverse traffic channel responsive to power control commands from the serving base station further comprises increasing the transmit power of the mobile station on the reverse traffic channel if the serving base station and each non-serving base station in the active set commands the mobile station to increase its transmit power.

40. (Original) The method of claim 33 further comprising computing a first channel gain of the reverse traffic channel relative to the reverse pilot channel.

41. (Currently Amended) The method of claim 40 wherein varying a first transmit power level of the mobile station on a reverse rate control channel responsive to power control commands from a serving base station, while conditionally ignoring power control commands from any non-serving base stations for purposes of power controlling the reverse rate control channel comprises:

~~comparing ignoring the power control commands from any non-serving base stations if~~
the first channel gain ~~to~~ meets a predetermined minimum gain; and
~~varying the transmit power level of the mobile station on considering power control~~
commands from one or more of the non-serving base stations for purposes of
power controlling the reverse rate control channel if the first channel gain ~~is~~ does
not ~~less than~~ meet the predetermined minimum gain.

42. (Original) The method of claim 41 further comprising varying the transmit power level of the mobile station on the reverse rate control channel responsive to power control commands from at least one non-serving base station if the first channel gain is less than the predetermined minimum gain.

43. (Original) The method of claim 41 further comprising computing a second channel gain of the reverse rate control channel relative to the reverse pilot channel.

44. (Currently Amended) The method of claim 43 wherein varying a first transmit power level of the mobile station on a reverse rate control channel responsive to power control commands from a serving base station, while conditionally ignoring power control commands from any non-serving base stations for purposes of power controlling the reverse rate control channel further comprises:

~~comparing~~ ignoring the power control commands from any non-serving base stations if

the second channel gain ~~to~~ meets a normal gain;

~~varying the transmit power level of the mobile station on considering power control~~

commands from one or more of the non-serving base stations for purposes of

power controlling the reverse pilot channel and the reverse rate control channel if

the second channel gain ~~is equal to~~ does not meet the normal gain; and

~~varying the transmit power level of the mobile station on considering power control~~

commands from one or more of the non-serving base stations for purposes of

power controlling the reverse rate control channel if the second channel gain is

~~greater than~~ does not meet the normal gain.

45. (Original) The method of claim 40 wherein varying a second transmit power level of the mobile station on a reverse traffic channel responsive to power control commands from at least one non-serving base station comprises:

comparing the channel gain to a predetermined maximum gain; and

varying the transmit power level of the mobile station on the reverse traffic channel if the channel gain is more than the predetermined maximum gain.

46. (Original) The method of claim 45 further comprising varying the transmit power level of the mobile station on the reverse traffic channel responsive to power control commands from the serving base station if the channel gain is greater than the predetermined maximum gain.

47. (Original) The method of claim 34 further comprising computing a gain ratio of the reverse rate control channel to the reverse pilot channel.

48. (Currently Amended) The method of claim 47 wherein varying a first transmit power level of the mobile station on a reverse rate control channel responsive to power control commands from a serving base station, while conditionally ignoring power control commands from any non-serving base stations for purposes of power controlling the reverse rate control channel comprises:

~~comparing~~ ignoring the power control commands from any non-serving base stations if
the channel gain ~~to~~ meets a predetermined maximum gain; and
~~varying the transmit power level of the mobile station on~~ considering power control
commands from one or more of the non-serving base stations for purposes of
power controlling the reverse rate control channel if the channel gain ~~is~~ does not
~~greater than~~ meet the predetermined maximum gain.

49. (Original) The method of claim 48 further comprising varying the transmit power level of the mobile station on the reverse rate control channel responsive to power control commands from at least one non-serving base station if the channel gain is greater than the predetermined maximum gain.

50. (Original) The method of claim 49 wherein varying a second transmit power level of the mobile station on a reverse traffic channel responsive to power control commands from at least one non-serving base station comprises:

comparing the channel gain to a predetermined minimum gain; and

varying the transmit power level of the mobile station on the reverse traffic channel if the channel gain is not less than the predetermined minimum gain.

51. (Original) The method of claim 50 further comprising varying the transmit power level of the mobile station on the reverse traffic channel responsive to power control commands from the serving base station if the channel gain is less than the predetermined minimum gain.

52. (Original) The method of claim 32 further comprising varying the varying a transmit power level of the mobile station on the first reverse pilot channel responsive to power control commands from at least one non-serving base station if the mobile station is in a discontinuous transmission mode.

53. (Original) The method of claim 32 wherein the reverse link comprises a primary pilot channel and at least one secondary pilot channel, and wherein the gain of the reverse traffic channel is fixed relative to the primary pilot channel.

54. (Original) The method of claim 53 wherein the gain of the reverse rate control channel is fixed relative to the sum of the transmit power on all reverse link pilot channels.

55. (Original) The method of claim 54 wherein the mobile station varies its transmit power on the primary pilot channel responsive to power control commands from at least one non-serving base station.

56. (Original) The method of claim 55 wherein the mobile station varies its transmit power on at least one secondary pilot channel responsive to power control commands from the serving base station such that the total transmit power on all reverse link pilot channels remains within predetermined limits.

57. (Currently Amended) A mobile station comprising:

a receiver to receive power control commands from a serving base station and at least one non-serving base station, the serving and non-serving base stations forming an active set for the mobile station;

power control logic to:

vary a first transmit power level of the mobile station on a first reverse link channel responsive to power control commands from the serving base station, while conditionally ignoring power control commands from any non-serving base stations for purposes of power controlling the first reverse link channel;

vary a second transmit power level of the mobile station on a second reverse link channel responsive to power control commands from at least one non-serving base station; and

a transmitter to transmit signals on the first and second reverse link channels at the first and second transmit power levels respectively.

58. (Original) The mobile station of claim 57 wherein the first reverse link channel is a reverse rate control channel and the second reverse link channel is a reverse traffic channel.

59. (Original) The mobile station of claim 58 wherein the gain of the reverse rate control channel is fixed relative to a reverse pilot channel and wherein the power control logic varies the transmit power level of the mobile station on the reverse pilot channel responsive to the power control commands from the serving base station.

60. (Original) The mobile station of claim 58 wherein the gain of the reverse traffic channel is fixed relative to a reverse pilot channel and wherein the power control logic varies the transmit power level of the mobile station on the reverse pilot channel responsive to the power control commands from the at least one non-serving base station.

61. (Original) The mobile station of claim 57 wherein the power control logic decreases the second transmit power level if at least one of the non-serving base stations in the active set commands the mobile station to decrease its power level.

62. (Original) The mobile station of claim 61 wherein the power control logic increases the second transmit power level if all of the non-serving base stations in the active set command the mobile station to increase its power level.

63. (Original) The mobile station of claim 57 wherein the power control logic varies the transmit power of the mobile station on the second reverse link channel responsive to power control commands from all the base stations in the active set for the mobile station, including the serving base station.

64. (Original) The mobile station of claim 57 wherein the power control logic decreases the second transmit power level if the serving base station or any one of the non-serving base stations commands the mobile station to decrease its transmit power on the reverse traffic channel.

65. (Currently Amended) The mobile station of claim 57 wherein the power control logic ~~increase~~ increases the second transmit power level if all the base stations in its active set command the mobile station to increase its transmit power on the reverse traffic channel.

66. (Original) The mobile station of claim 57 further comprising computing a first channel gain of one of the first and second reverse link channels relative to a third reverse link channel.

67. (Original) The mobile station of claim 66 wherein the power control logic is operative to:
determine if the first channel gain meets a predetermined criterion; and
vary the transmit power level of the mobile station on the first reverse link channel if the first channel gain meets the predetermined criterion.

68. (Original) The mobile station of claim 67 further wherein the power control logic varies the first transmit power level of the mobile station on the first reverse link channel responsive to power control commands from at least one non-serving base station if the first channel gain does not meet the predetermined criterion.

69. (Original) The method of claim 67 further comprising computing a second channel gain of one of the first and second reverse link channels relative to the third reverse link channel.

70. (Currently Amended) The method of claim 69 wherein varying a first transmit power level of the mobile station on a first reverse link channel responsive to power control commands from a serving base station, while conditionally ignoring power control commands from any non-serving base stations for purposes of power controlling the first reverse link channel comprises:

~~determining if the second~~ ignoring the power control commands from any non-serving base stations if the first channel gain meets a first predetermined criterion;

~~determining ignoring the power control commands from any non-serving base stations if~~
the second channel gain meets a second predetermined criterion; and

~~varying the transmit power level of the mobile station on~~ considering power control commands from one or more of the non-serving base stations for purposes of power controlling the first reverse link channel if either of the first and second channel gains does not meet the first and second predetermined criterion respectively.

71. (Original) The mobile station of claim 66 wherein the power control logic is operative to:

determine if the first channel gain meets a predetermined criterion; and

vary the transmit power level of the mobile station on the second reverse link channel if
the first channel gain meets the predetermined criterion.

72. (Original) The mobile station of claim 71 further wherein the power control logic varies the second transmit power level of the mobile station on the second reverse link channel responsive to power control commands from the serving base station if the first channel gain does not meet the predetermined criterion.

73. (Original) The mobile station of claim 57 wherein the power control logic varies the transmit power of the mobile station on the first reverse link channel responsive to power control commands from non-serving base stations when the mobile station is in a discontinuous transmission mode.

74. (Original) The mobile station of claim 58 wherein the reverse link comprises a primary pilot channel and at least one secondary pilot channel, and wherein the gain of the reverse traffic channel is fixed relative to the primary pilot channel.

75. (Original) The mobile station of claim 74 wherein the gain of the reverse rate control channel is fixed relative to the sum of the transmit power on all reverse link pilot channels.

76. (Original) The mobile station of claim 75 wherein the power control logic varies the transmit power of the mobile station of the primary pilot channel responsive to power control commands from at least one non-serving base station.

77. (Original) The mobile station of claim 76 wherein the power control logic varies the transmit power of at least one secondary pilot channel responsive to power control commands from the serving base station such that the total transmit power on all reverse link pilot channels remains within predetermined limits.

78. (Currently Amended) A base station for a wireless communication network, comprising:

a receiver to receive signals from a mobile station on first and second reverse link

channels at first and second received power levels respectively;

power control logic to:

determine whether the base station is a serving base station for forward link

communications with the mobile station;

generate power control commands to power control at least a first reverse link

channel if the base station is the serving base station;

generate power control commands to power control only a second reverse link

channel if the base station is a non-serving base station; and

a transmitter to transmit the power control commands to the mobile station[[:]].

79. (Original) The base station of claim 78 wherein the first reverse link channel is a reverse rate control channel and the second reverse link channel is a reverse traffic channel.

80. (Original) The base station of claim 79 wherein the gain of the reverse rate control channel is fixed relative to a reverse pilot channel.

81. (Original) The base station of claim 80 wherein the power control logic generates power control commands to power control the reverse pilot channel if the base station determines that it is the serving base station.

82. (Currently Amended) The base station of claim 78 wherein the power control logic generates a first power control command to power control ~~the~~ a reverse pilot channel and a second power control command to power control ~~the~~ a reverse rate control channel if the base determines that it is the serving base station.

83. (Original) The base station of claim 79 wherein the gain of the reverse traffic channel is fixed relative to a reverse pilot channel.

84. (Currently Amended) The base station of claim 83 ~~further~~ wherein the power control logic generates power control commands to power control the reverse pilot channel if the base station determines that it is a non-serving base station.

85. (Currently Amended) The base station of claim 78 ~~further~~ wherein the power control logic for a non-serving base station generates power control commands to power control the reverse pilot channel if the mobile station is in a discontinuous transmission mode and received power on the reverse pilot channel is above a predetermined threshold at the non-serving base station.